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EPIDEMIOLOGY OF SCHISTOSOMIASIS IN CHINA

[Comment: This report presents information on the spread of Japanese schistosomiasis in China as given in the Chinese-language monograph, Jih-pen Hsueh-hsi-ch'ung-ping Fang-chih Kai-yao (Principles for the Prevention and Cure of Japanese Schistosomiasis) by Hsieh Huang (謝煌).]

It is not known when schistosomiasis was first introduced into China. In Singapore in 1905, a postmortem examination revealed schistosoma eggs in the feces of a traveler from Fukien who had died of cholera. It then became known that the disease had spread to China. Subsequent findings during 1907-1909 established the fact that the disease had reached the epidemic stage. The spread of the disease in China is at present a very serious matter. It is found in the provinces of Kiangsu, Chekiang, Kiangsi, Anhwei, Hupeh, Hunan, Fukien, Kwangtung, Kwangsi, Szechuan, and Yunnan, and in Taiwan. It is most prevalent in the Yangtse Valley lake regions, in Soochow and Chia-hsing on the T'ai Hu, Chiu-chiang on the P'o-yang Hu, and Ch'ang-te and Yueh-yang on the Tung-t'ing Hu.

The World Health Organization reported in 1950 that approximately 16 million people in the provinces of Kiangsu, Chekiang, Anhwei, and Fukien had the disease. This figure may have been an exaggeration, but there are at least 10 million victims of the disease in that area. It is estimated that in all of China approximately 30 million, or one of every 16 persons, have schistosomiasis. In some areas hardly a person has escaped its ravages. For example, in the village of Jen-tun Ts'un, Ch'ing-p'u Hsien, Kiangsu Province, in 1951, 341 persons of a total population of 461 were examined, and 332, or 97.3 percent, were found to be schistosomiasis positive.

The results of the Jen-tun Ts'un survey are shown in the following chart:

Age	Sex		Total	Positive		Percentage	
	M	F		M	F	M	F
0-4							
5-9	1	3	4		3		100
10-14	29	15	44	29	13	100	87
15-19	28	24	52	28	24	100	100
20-24	17	16	33	17	14	100	88
25-29	17	14	31	16	14	94	100
30-34	13	16	29	12	16	93	100
35-39	16	13	29	16	13	100	100
40-44	21	15	36	21	14	100	93
45-49	17	13	30	16	13	94	100
50-54	11	5	16	11	5	100	100
60-64	3	4	7	3	4	100	100

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Age	Sex		Total	Positive		Percentage	
	M	F		M	F	M	F
65-69	2	2	4	2	2	100	100
70-74	1	5	6	1	5	100	100
75-79	--	1	1	--	1	--	100
80	--	--	--	--	--	--	--
Total	187	154	341	183	149	--	97.3

In general, statistics show that in China farmers are more likely to have the disease than persons in other occupations. More men are affected than women, and almost all cases are within the 10-55 year age bracket. This does not mean that persons who do not fall within the above age group have stronger resistance to schistosomiasis. The statistics merely show that people in the above age group are more prone to come in direct contact with the parasite in its larval stage than are other persons.

The spread of Japanese schistosomiasis in a given area depends on (1) the existence of the intermediary host, snails of the genera *Katayama* and *Oncomelania*; (2) whether the eggs of the schistosoma can finally reach a stream; and (3) whether inhabitants of the area come in contact with the larvae.

Five chief factors which contribute to the spread of schistosomiasis are:

1. Climate

The climate in the eastern, western, and southern parts of China is favorable to the breeding of the intermediary host snails. The disease has not been found in Hopeh and further north where there are long, hard winters.

2. Rainfall and Humidity

Although the parasites are amphibious, they can breed and thrive only if there is sufficient rainfall and humidity. This accounts for the fact that no cases of Japanese schistosomiasis have been found in such places as Peiping, K'aifeng, Tsinan, Tsingtao, Mukden, and Harbin where the average yearly rainfall is from 0.529 to 0.649 [meters?]. In contrast, the disease is found in such places as Shanghai, Chen-chiang, Hankow, Ch'angsha, I-ch'ang, and Foochow where the average rainfall runs from 1.016 to 1.484 [meters?].

3. Soil

The snails of the genera *Katayama* and *Oncomelania* feed on certain species of wild grasses which grow on the fertile banks of rivers and lakes. These grasses do not grow on the immediate infertile banks of the T'ai Hu but on the fertile banks of nearby tributaries. There is, therefore a difference in the incidences of the disease in two small areas which are subject to the same climatic conditions.

4. Disposition of Human Excrement

The eggs of the schistosoma which are passed in the feces, will eventually hatch if they reach a stream of water before they die. Inhabitants of the southern banks of the Yangtse River contribute directly to the spread of the disease by scrubbing their night-soil buckets in the river.

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5. Life and Habits of the People

There is a greater chance that the disease will spread in an area where the inhabitants habitually expose themselves to water infested with the schistosomia larvae. On the other hand, the disease simply cannot spread if people stay away from the water. For instance, the disease is less prevalent among the urban residents than among the rural folk of Soochow. The former use well water for bathing and drinking purposes almost exclusively.

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